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Dana Brad

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EXAMINER

WANG, CLAIRE X

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

12/29/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/802,502	<b>Applicant(s)</b> BRAD ET AL.	
	<b>Examiner</b> CLAIRE WANG	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-13,18-21 and 26-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-13, 18-21, and 26-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 4, 2010 has been entered.

2. Applicant's amendment has necessitated new grounds of rejection. Thus, new grounds of rejection are presented in this Office Action.

***Response to Arguments***

3. Applicant's arguments with respect to claims 1, 2, 5-13, 18-21, and 26-28 have been considered but are moot in view of the new grounds of rejection.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 21 and 26-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. As to claims 21, 26 and 28, they claim controlling the image barrier without regard to imaging a two dimensional area. The specification does not define that the imaged area is not a two dimensional area. Applicant points to page 6 of the specification for support; however page 6 never gives an explicit definition that the linear scanner scans an image that it is not two dimensional image. Therefore, the newly amended claims 21, 26 and 28 are considered to be new matter. As to claim 27, it is dependent upon rejected claim 26 and it does not amend any deficiencies of its parent, thus it is also rejected.

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6. Claims 1, 2, 5-13, 18-21, and 26-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As to claims 1 and 18, the new amendments contain evaluation of gray levels in order to detect an intrusion. When looking for support within the specification, the only embodiment that discusses grey values is on page 6, lines 9-29 of the specification. As to claims 21, 26-28, the new amendments seem to also point to the embodiment described on page 6, lines 9-29 of the specification for support. The claims describe a projected line of light that is detected using an image device. When read in light of the specification, said image device is a line scan camera (Spec page 6, lines 9-29). However, it is not clear as to how a single projected line can be aligned to detect a single projected line. In real-world application, it would be impossible for said alignment to occur due to circumstances such as vibration, installation or any sort of movement that would cause the alignment to be anything but a perfect pixel to pixel match. Further, it appears that Applicant is mixing embodiments in a way that is not supported by the specification. In Applicant's specification an example is given of using a backlight so that the position of a strip can be easily detected (Spec Page 6, lines 26-29). However, claims 1, 18, 21 and 26-28 teach using an imaging device to detect a projected light pattern and not a strip that is light using a backlight as disclosed in the specification. Therefore, claims 1, 18, 21 and 26-28 describe an embodiment that is not within the specification and therefore would not allow one ordinarily skilled in the art to

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make and/or use the invention. As to claims 2, 5-13 and 19-20, they are dependent upon rejected claims above and they do not amend any deficiencies of their parent, thus they are also rejected.

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7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 2, 5-13, 18-21, and 26-28 are rejected under the second paragraph of 35 U.S.C. 112 as being indefinite. As to claims 1, 18, 21 and 26-28, they all seem to require support from the embodiment of Page 6, lines 9-29. However, said embodiment teaches using a backlight so that the position of a strip can be easily detected, thus indicating that the "line" to be detected is not a projected line of light but a physical strip. Claims 1, 18, 21 and 26-28, on the other hand, teach using an imaging device to detect a projected light pattern and not a strip as disclosed in the specification. According to MPEP 2173.03 [R-1] inconsistency with the specification disclosure or prior art teachings may make an otherwise definite claim take on an unreasonable degree of uncertainty. Thus, Claims 1, 18, 21 and 26-28 are considered to be indefinite. As to claims 2, 5-13 and 19-20, they are dependent upon rejected claims above and they do not amend any deficiencies of their parent, thus they are also rejected.

9. Claims 21 and 26-28 are withdrawn from prior art considerations until they have overcome the current rejections under 35 U.S.C. 112 first and second paragraphs.

**Note:** In order to further prosecution, Examiner has applied art to claims 1, 2, 5-13 and 18-20 despite the pending 35 U.S.C. 112 first and second paragraph rejections.



***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 2, 5-9, 11-13 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laird (US 2003/0118237) in view of Wuestefeld et al. (US 6,737,970 B2 hereinafter "Wuestefeld"), view of Zur et al. (5,508,511 hereinafter "Zur"), further in view of Dottling et al. (US 2003/0030723 A1 hereinafter "Dottling" Note: Dottling is used to teach inherent properties of Wuestefeld).

As to claim 1, Laird teaches a barrier operator for moving a barrier between open and closed positions with respect to a barrier opening (a system that detects objects entering a garage door; Paragraph [0010], lines 1-3), comprising a pattern present during at least all movement of the barrier ([0012], lines 3-5); an imaging device to observe a portion of the barrier opening as illuminated by the optical pattern (CCD camera views the pattern; [0011], lines 2-4); and a controller coupled to the imaging device to sense when the optical pattern in the observed portion of the barrier opening changes, and generating a detection signal in response thereto (when an object enters the field of vision of the camera, it interrupts the viewing of the recognized pattern and

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the processor decides whether or not the object is an intrusion; if it is an intrusion, then a signal is sent to the head unit of the garage door operator; [0011], lines 12-22), the detection signal being indicative of the presence of the obstruction at least during all movement of the barrier ([0012], lines 3-5).

Wuestefeld teaches an opto-electronic apparatus for detection of intrusion of an object (Title), wherein an illumination unit projects a straight line onto the monitored area, wherein the projected light is projected from top to bottom (Fig. 2). Further, the detected pattern of the line is compared to pre-set patterns stored in memory. When the detected pattern and the stored pattern is substantially the same, no object has been detected (Col. 3, lines 1-18). Thus, Wuestefeld reads on the claimed pattern used is generated using light projections, wherein the light projection being a single uninterrupted substantially straight line that is projected on the floor. Further, Wuestefeld inherently teaches detection of change in grey levels of the captured image because digital images are composed of various gray levels and by comparing two digital images one is detecting a change in the grey level. Dottling demonstrates that this is a well known concept in the art (Dottling teaches an evaluation unit that compares pixel by pixel, gray values of a current image with a reference image in order to detect foreign object in a monitored area; Paragraph [0004], lines 4-10). Therefore, it would have been obvious for one ordinarily skilled in the art at the time the invention was made to modify the garage door obstacle detection system of Laird by changing the pattern detecting method with Wuestefeld's method of detection of intrusion of an object

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by the use of detecting change of captured projected line pattern from a light that is projected from top to bottom, in order to allow the garage door system to have a non-contact manner of operation (Wuestefeld Abstract). Furthermore, it would have been obvious because it is a combination of known elements to yield predictable results.

Laird and Wuestefeld teach sounding an alarm when an intrusion object is detected (Laird [0011]). However, they do not teach the detection signal effects at least a stopping or reversal of the closing movement of the barrier. Zur teaches stopping or reversing a closing door when an object is detected (Col. 1, lines 20-32). Thus, Zur reads on the claimed detection signal effects at least a stopping or reversal of the closing movement of the barrier. Therefore it would have been obvious for one ordinarily skilled in the art at the time the invention was made to have modified the alarm of Laird to further include stopping for reversing of the garage door in order to prevent personal injury and/or property damage to a person or thing caught in the closing door as well as damage to the door itself (Zur Col. 1, lines 20-24).

As to claim 2, Wuestefeld teaches wherein the imaging device is a single device (camera; 15 Fig. 2) which is configured to acquire an image of the line and detect an interruption of the line of light (line of light; 17 Fig. 2).

As to claim 5, Laird teaches having a pattern within the barrier opening in order to detect objects intruding in the area (Fig. 1) and Wuestefeld teaches the illuminating unit projecting an optical line within detection area (Fig. 2). Thus combination of Laird and Wuestefeld teach the light pattern generator is configured to be mounted above and at an angle to the barrier opening because it would have been obvious for one ordinarily skilled in the art at the time the invention was made to place the projecting unit of Wuestefeld above and at an angle to the barrier opening of Laird, since it is simply substituting pattern with another. The optical light pattern of Wuestefeld performs the same function as the printed of Laird, thus yielding predictable results.

As to claim 6, Laird teaches an alarm device to generate an alarm device configured to generate an alarm indication in response to the detection signal ([0011] lines 20-22).

As to claim 7, Wuestefeld teaches wherein the alarm indication is an audible signal (Col. 1, lines 24-25).

As to claim 8, Wuestefeld teaches wherein the alarm indication is a visual signal (shut down the machine is something that can read as a visual signal or some other action could also be read as a visual signal; Col. 1, lines 24-25).

As to claim 9, Laird teaches a barrier drive unit for moving the barrier and wherein the controller is responsive to the detection signal to control the barrier drive (barrier movement operator; [0005], line 6).

As to claim 11, Laird teaches wherein the imaging device is a CCD camera (1 Fig. 1).

As to claim 12, Wuestefeld teaches wherein the light pattern generator is disposed on the barrier (projecting a line onto the detection area and in this case the monitored area is the side wall of the garage door; Col. 3, lines 1-18).

As to claim 13, Laird teaches a barrier movement operator ([0005], line 6). Laird does not expressly disclose that the barrier movement operator contains a head unit with a motor for moving the barrier. However, Examiner takes Official Notice that a motor for moving barriers is well known in the art. It would have been obvious at the time of the invention was made to one of ordinary skill in the art to add a motor to the barrier movement operator since Examiner takes official notice that motors are commonly used to move barriers.

As to claim 18, it is the method claim of claim 5. Please see above for detail analysis.

As to claim 19, Wuestefeld teaches generating an alarm signal responsive to the control signal (Col. 1, lines 23-24).

As to claim 20, Laird teaches having a pattern within the barrier opening in order to detect objects intruding in the area (Fig. 1) and Wuestefeld teaches the illuminating unit projecting an optical line within detection area and detecting said optical line using a camera (Fig. 2). Thus combination of Laird and Wuestefeld teach wherein the digital imaging device is at an angle offset from the vertical plane formed by the barrier when it closes the opening because it would have been obvious for one ordinarily skilled in the art at the time the invention was made to place the camera in the same position as it is shown in Fig. 2 of Wuestefeld to the barrier opening system of Laird because it is replace known elopements and yielding predictable results.

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12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Laird, Wuestefeld, Zur and Dottling further in view of Cofer et al. (US 6,841,780 B2 hereinafter "Cofer").

As to claim 10, Laird and Wuestefeld teach an object detection system wherein an electrical light pattern is generated in order to detect the object (Wuestefeld Col. 3, lines 1-18). Cofer teaches an apparatus for detection objects also using projected light patterns, wherein the light patterns are generated using a laser diode (Cofer Col. 3, line 59) and an optical lens to focus a beam generated by the laser diode (Cofer Col. 3, line 61). Thus, Cofer reads on the claimed laser diode and optical lens. Therefore, it would have been obvious for one ordinarily skilled in the art at the time the invention was made to combine the laser diode and optical lens of Cofer with light pattern of Laird and Wuestefeld since it is well known in the art that the combination of a laser and optical lens may produce light patterns.



***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CLAIRE WANG whose telephone number is (571)270-1051. The examiner can normally be reached on M-F 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on 571-272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Claire Wang/  
Examiner, Art Unit 2624  
12/14/2010